ually increased until the maximum degree of illumination has been reached, and this may be maintained from fifteen to fifty seconds without discomfort, when the current should be gradually decreased; the simultaneous transillumination of the two mastoids giving opportunity for comparative observation. Under normal conditions, by this method of transillumination, the mastoid region exhibits a rose-colored glow outlining the mastoid process, more intense anteriorly, and gradually fading in intensity upward, downward, and backward. In the thinner and more pneumatic mastoids the illumination is more intense, while with dense bony structure, or much superincumbent fatty tissue, the coloration sinks to a dull red and the bony outline is less distinguishable. The portion of the mastoid process comprising pneumatic cells transmits the light from the external canals most perfectly, sclerotic or eburnized bone much less, while pus, granulation tissue, and cholesteatomatous masses are comparatively obstructive and their presence is indicated by the shadows in the illuminated field. The clinical value of this method of simultaneous transillumination of both mastoids consists in the opportunity it affords for comparison where the disease is unilateral, and as a control examination for the determination of the location of light obstructive elements in the mastoid contents, simple hyperemia of the bone being evidenced by a diffuse diminution of the transillumination.

Investigations Concerning Disturbances of Hearing in the Artillery Service.—As the result of his observations, JAEHNE (*Zeitschrift f. Ohrenheilkunde*, lxii, 111) arrives at the conclusion that members of the foot artillery, of several years' service, are the subjects of a permanent impairment of hearing, as the result of the effect of exposure to loud noise upon the auditory nerve in its terminal distributions. Pathologically, the disturbance is to be regarded as a degenerative neuritis, the clinical symptoms, in the majority of cases, being an impairment of hearing for tones in the fourth and fifth ledger octaves, either with or without diminution of the upper tone limit. The medium for transmission of the injurious sound waves was mainly the craniotympanal rather than the aërial, except in instances in which the soldier stood near the muzzle of the gun in firing, and the author advises protection by interposition of acoustically opaque bodies, as well as the customary stopping of the external canals. Passow, in his treatise upon injuries of the ear, quotes Mueller, who examined 51 artillerymen both before and after artillery practice with heavy guns, and found that in 40 cases the duration of hearing for the tuning fork was perceptibly shorter immediately after the gun practice than before. Marked shortening of the duration of hearing by bone conduction, without corresponding impairment of aërial hearing, is also observable in paralytics, alcoholics, and epileptics, as well as in cases of dural adhesions. A similar decrease is observable in cases of hysterical deafness and in persons of advanced years. In labyrinth injury, where the hearing is noticeably impaired for sounds aërially conveyed, the higher tones are usually heard less, proportionately, than tones of low pitch, and in some cases this difference is striking; even where the impairment of the general hearing is slight the loss of hearing for the higher tones is pronounced, as has been determined by

Bezold in his tests of sharpshooters and hunters, by means of Galton whistles, the left ear being more commonly affected because of its greater exposure to concussion in the use of fire arms. A corresponding decrease in the hearing of high tones has also been observed by Buerchner, in locomotive engineers and firemen, by Habermann, in boilermakers and machinists, and by Gradenigo, in stonemasons and millers. If the upper tone limit (normal, 45,000 v. s.) is lowered, or the duration of hearing for high tones materially decreased, it may be assumed that the hearing for the remaining tones in the scale of audition is not absolutely normal; the larger the participation of the perceptive portion of the labyrinth in an injury, the more the auditory nerve is restricted in its function, the greater will be the limitation of the auditory field; while, in the majority of cases of labyrinth concussion, it is the basis of the cochlea that is injured, it does not follow that remaining portions of the cochlea are similarly implicated, and, if limited portions, or even single fibers, of the auditory nerve remain uninjured, there will be the tone islands and tone spaces described by Bezold; Baginsky, by experiments on dogs, has established the fact, confirmatory of the Helmholtz theory, that after destruction of the base of the cochlea the animals responded only to tones of low pitch, and after destruction of the upper portion of the cochlea, only to tones of high pitch.

HYGIENE AND PUBLIC HEALTH.

UNDER THE CHARGE OF

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Pellagra and its Relation to Maize.—RAUBITSCHEK (*Berliner klin. Wochenschr.*, June, 1910, xxiii, No. 26) seems to have been the first to take up in an experimental way the question as to the effects of exposure to sunlight upon maize-fed animals in association with the question of a possible relation to the etiology of pellagra. Raubitschek furnishes in a recent paper (*Centralbl. f. Bakt.*, 1 Abt., Orig., Band lvii, Heft 3) more detailed experiments which throw important light upon this subject. He notes the immense amount of literature which has accumulated on the etiology of pellagra and condemns severely the very questionable kind of work which has been done in this field. He also comments upon the scanty results of pathologico-anatomical work upon this disease and that modern microbiological, especially serological technique has not to any extent been used in clearing up its etiology. The theories of the etiology of pellagra are considered in three groups—the bacterial, the toxic, and the auto-toxic, none of which in its present state can be considered satisfactory. Lavinder points out that Raubitschek fails to take note of the more